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## ‘Hands-On’ Activities: Let’s Get Real

E. E. Roettger and B. F. Buratti (JPL)

Science education guidelines, such as the National Science Standards and the California Science Framework, recommend a hands-on, interdisciplinary approach to the teaching of science. There appears to be a rather large gap between recommending this approach and implementing it, however. We think part of the gap is that many (otherwise excellent) hands-on activities are either inaccessible to teachers, or do not appear relevant to the curriculum. As part of a teachers’ workshop, we are modifying hands-on activity instructions to: 1) emphasize an important concept or general principle, 2) use only materials which are cheap or free, 3) use only materials which are readily accessible in a teacher’s or student’s ordinary life, 4) are completely photocopyable, 5) are complete, including science instruction, 6) contain information about the source (where to get another copy of the instructions, date of publication), 7) contain information about additional sources, resources, and readings, 8) contain ways of integrating the activity into an interdisciplinary curriculum, 9) contain the means for evaluating the effectiveness of the activity, and 10) contain ideas for preliminary and follow-up activities.

This work is being performed at the Jet Propulsion Laboratory, Caltech, under contract with NASA.

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